WHAT IS CLAIMED IS:

1. A communication device comprising:

a sub-rack unit comprising:

a back wiring board having first connectors arranged in lines thereon; and

a frame plate including vertical ribs and placed on said back wiring board so that the vertical ribs separate the lines of the first connectors; and

a plurality of plug-in units each comprising:

a printed board including top and bottom sides, and parallel first and second sides perpendicular to the top and bottom sides, said printed board having second connectors provided on the first side thereof;

a metal case including top and bottom faces, and parallel first and second side faces perpendicular to the top and bottom faces so as to cover said printed board; and

first and second spring members,

wherein each of said plug-in units is mounted in said sub-rack unit with the first and second connectors being connected so that the first and second side faces of said metal case are pressed outward against the ~~vertical ribs of said frame plate~~ by resilient forces generated by elastic deformation of said first and second spring members, respectively.

2. The communication device as claimed in

claim 1, wherein:

each of the plug-in units further comprises:

a front member attached to the second side of said printed board;

first and second arm members extending horizontally from top and bottom end portions of said front member, respectively; and

first and second pillar members provided vertically to oppose each other between said first and second arm members; and

said first and second spring members are attached to inner faces of the first and second side faces of said metal case so as to contact said first and second pillar members, respectively.

3. The communication device as claimed in claim 1, wherein said printed board is supported so as to be displaceable in a rotational direction around the second side of said printed board.

4. The communication device as claimed in claim 1, wherein:

each of said plug-in units further comprises a shield member provided on one end portion of each of the top and bottom faces of said metal case so that said shield members elastically deform to be pressed against said frame plate when each of said plug-in units is mounted in said sub-rack unit.

5. The communication device as claimed in claim 1, wherein:

each of said plug-in units further comprises first and second slider members provided on the top and bottom faces of said case metal, respectively, the second slider member having a downward convex part formed on one end portion thereof, the one end portion being in a reverse direction to said sub-rack unit when each of said plug-in units is inserted thereinto;

said sub-rack unit further comprises a pair of first and second guide rail parts for guiding each of said plug-in units to be inserted into said sub-rack unit, the second guide rail part having a notch formed on one end portion thereof on an insertion side from which each of said plug-in units is inserted into the sub-rack unit; and

each of said plug-in units is mounted in the sub-rack unit in a required position when inserted into the sub-rack unit with said first and second slider members being guided by said first and second guide rail parts, respectively, until the downward convex part engages with the notch, and is prevented from being mounted in the sub-rack unit by a contact of the downward convex part with one end of the first guide rail part on the insertion side when inserted upside down into the sub-rack unit.

6. The communication device as claimed in claim 2, wherein said first and second pillar members include first and second portions made of an insulating material, respectively, so that said first and second spring members contact said first and second portions, respectively.

7. The communication device as claimed in claim 2, wherein:

said printed board has first and second notch parts formed in positions close to the first side thereof on the top and bottom sides thereof, respectively;

said first and second arm members have first and second pins fitted into said first and second notch parts, respectively; and

said front member has first and second card lever assemblies provided on the top and bottom end portions thereof, respectively, so that operations of said first and second card lever assemblies cause said first and second pins to press said first and second notch parts so as to exert forces to press each of the plug-in units into the sub-rack unit on the first and second notch parts, respectively.

8. A plug-in unit to be mounted in a sub-rack unit including connectors, comprising:

a printed board including connectors provided on a side thereof, the connectors being connected with the connectors of the sub-rack unit so that the plug-in unit is mounted therein;

a metal case including top and bottom faces, and parallel first and second side faces perpendicular to the top and bottom faces so as to cover said printed board; and

first and second spring members elastically pressing outward the first and second side faces of said metal case, respectively.

9. A plug-in unit to be mounted in a sub-rack unit including connectors, comprising:

a printed board including parallel first and second sides and having connectors provided on the first side thereof, the connectors being connected with the connectors of the sub-rack unit so that the plug-in unit is mounted therein;

a photoelectric conversion module provided on said printed board;

a front member attached to the second side of said printed board, the front member having a space formed therein; and

a rotating member holding adapters for connecting optical connectors, the rotating member being supported in the space of said front member so as to be rotationally moved between a position in which said rotating member is housed in said space with the adapters facing downward and a position in which the adapters protrude from said front member through an opening formed on a first side thereof to face slantingly downward, the first side facing a reverse direction to said printed board;

wherein plugs provided on ends of optical fibers extending from said photoelectric module are connected to the adapters.

10. The plug-in unit as claimed in claim 9, wherein said front member includes a protector provided to cover the opening through which the adapters protrudes from said front member, the protector covering said rotating member when the rotating member is rotationally moved so that the adapters protrude from said front member.

11. The plug-in unit as claimed in claim 9, wherein said front member further comprises:

an opening for letting through the plugs of the optical fibers, the opening being formed on a second side of said front member, the second side being opposed to the first side thereof; and

an optical fiber path block formed of two parts combined to form therebetween a path having such a length and a size as to let through the optical fibers, the optical fiber path block being attached on said opening.

12. A communication device comprising:

a sub-rack unit comprising:

a back wiring board having connectors; and

first and second guide rail parts being attached to a top side and a lower portion of said sub-rack unit, respectively;

a plurality of plug-in units being inserted along the first and second guide rail parts into said sub-rack unit to be plugged into the connectors of said sub-rack unit;

a member for forming an air reservoir room formed under the second guide rail parts; and

a plurality of motor-fan units each having a motor fan, said motor-fan units being plugged into said sub-rack unit under said member for forming the air reservoir room.

13. The communication device as claimed in claim 12, wherein:

each of said motor-fan units further comprises a lid member provided on the motor fan, the lid member including a packing around the motor fan and a projection part formed on an end portion thereof, the end portion being in a direction in which each of said motor-fan units is plugged into said sub-rack unit, the projection part having a top face tilt in said direction; and

the packing is compressed to allow the slider member to be pressed against a bottom face of said member for forming the air reservoir room when each of said motor-fan units is plugged into said sub-rack unit.

14. The communication device as claimed in claim 12, further comprising:

a filler plug-in unit having the same size and resistance to airflow as each of said plug-in units, the filler plug-in unit being filled into a space in said sub-rack unit, the space being left empty by said plug-in units mounted in said sub-rack unit.

15. A plug-in unit to be mounted in a sub-rack unit, comprising:

a front member including a convex part; and

first and second card lever assemblies attached to top and bottom end portions of said front member, respectively, each of said first and second card lever assemblies comprising:

a main body; and

an auxiliary lever having a hook part and supported by said main body so as to be rotationally moved around a rotation center, the hook part being formed on an elastically deformable frame part having a frame shape with a hole formed therein,

wherein the hook part of said auxiliary lever is positioned on a level with the rotation center in a direction in which the plug-in unit is inserted into the sub-rack unit when the hook part engages with the convex part of said front member.